Connecticut Department of Transportation

January 25, 2013

What's ahead in the Capital Construction Program?

What's ahead and why are we here ?

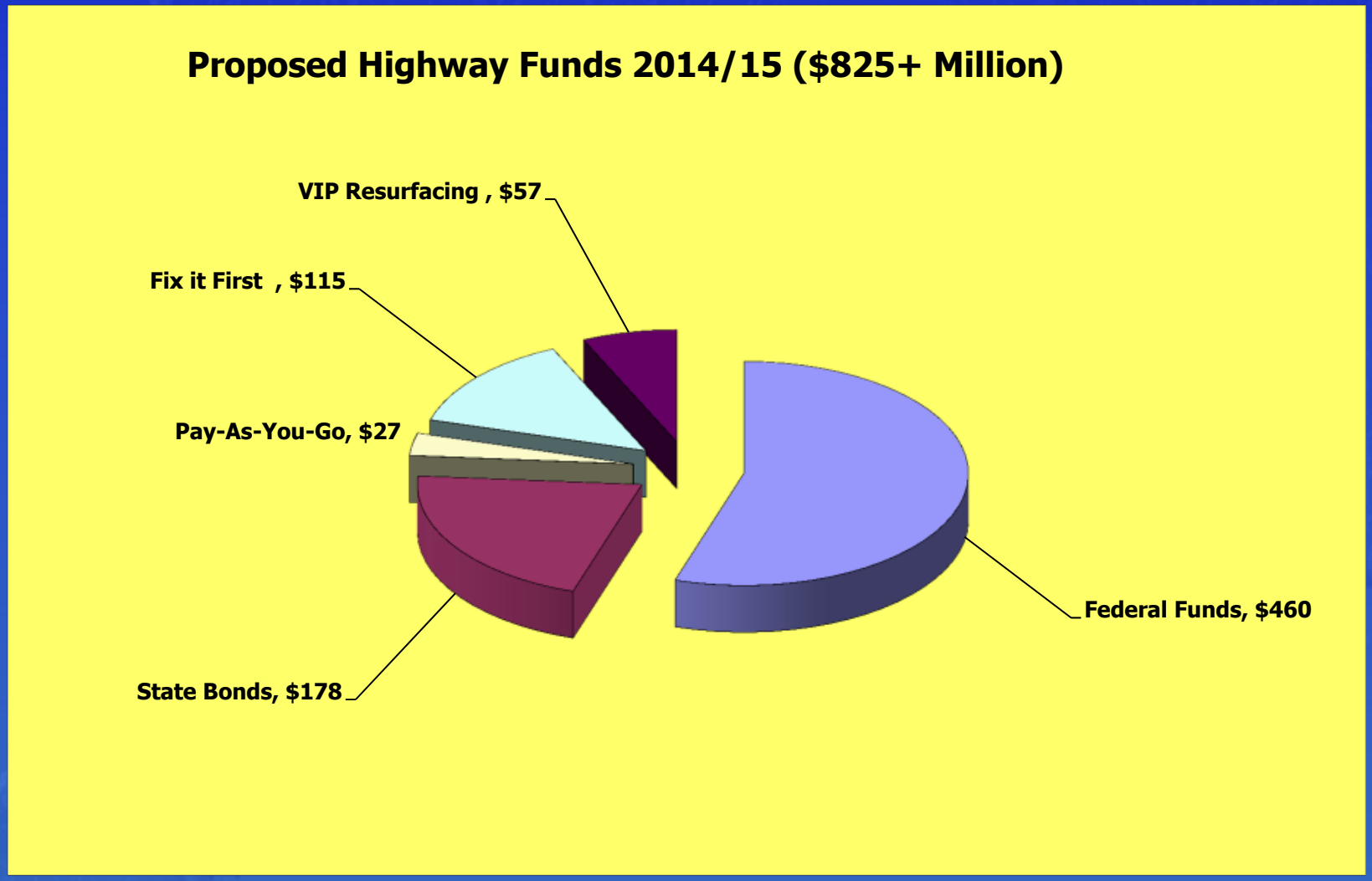
- **Stakeholder Outreach**

- **Capital Program Status**

- **New Initiatives in Project Delivery**
  - **Accelerated Bridge Construction**
  - **Contracting Models: Design Build/ CMAR**

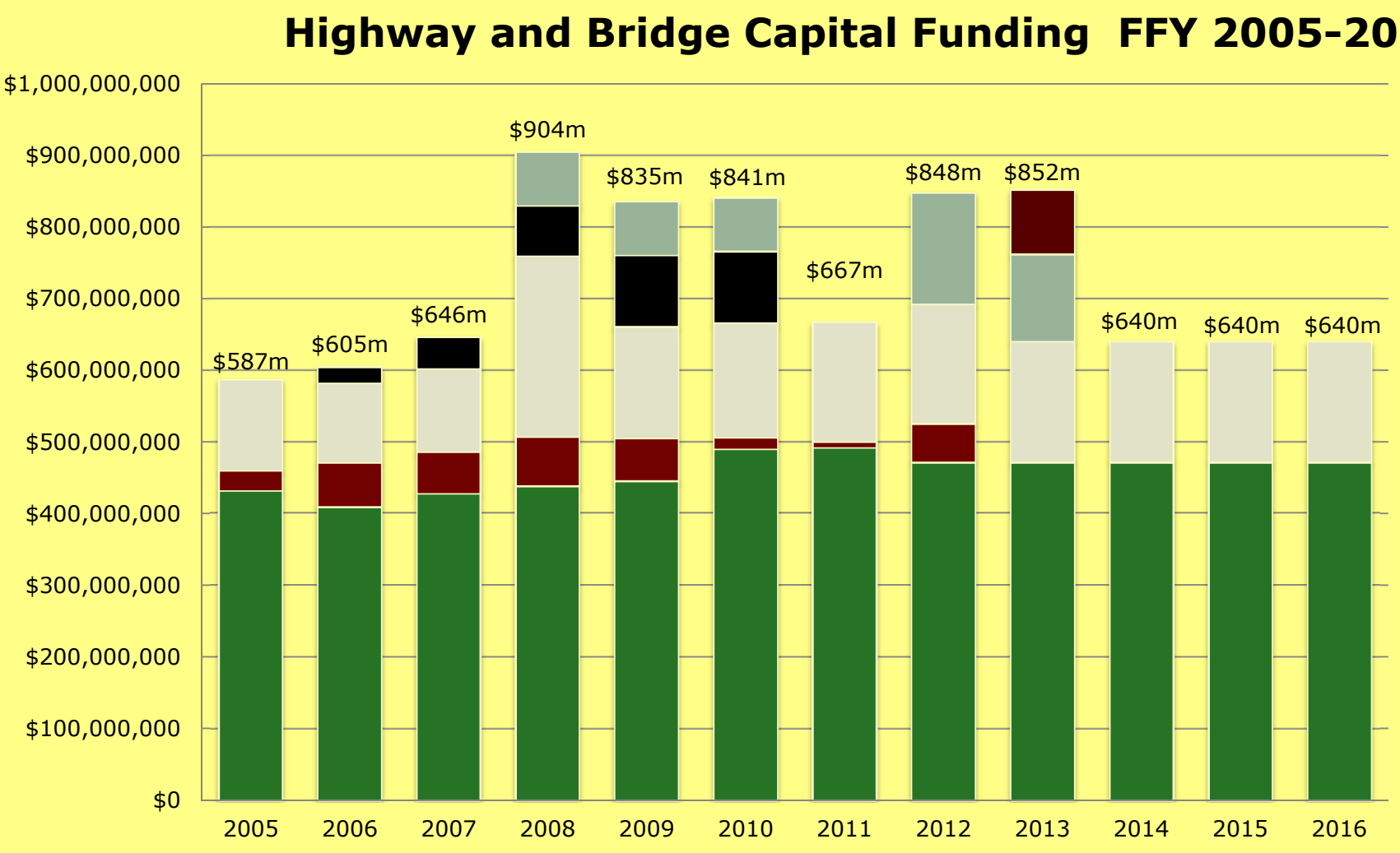
Highway and Bridge Funding

- **Pursue Fix it First funding**



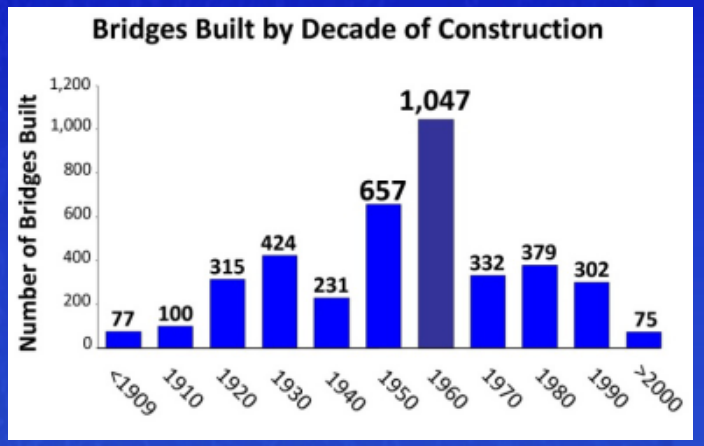
2013 Capital Program

- **Map 21 – consistent federal funding level for FFY 2013 and 2014 only**



2013 Capital Program

- Preservation is a priority
- General permits
- "Lean" initiatives
- MMAs
- Proposed Local Roads Program
- Proposed changes to the Local Bridge Program



2013 Capital Program

- **$850 mil available in cap program. Equates to approx $525 mil in contract *bid* value**
- **Roughly 130 projects on 2013 avd'g schedule at roughly $700 million contract bid value**
- **By Feb will have adv'd 50+ (5 months)**
- **Anticipate to exceed the 80s we've seen in the past at $575 million level**
- **We're bidding in excess of our means (ie increase federal AC mechanism)**
- **2014/15 – requesting $750 mil**

New Initiatives in Project delivery

- All about ***accelerated*** project delivery
- Design it & Build it faster
- FHWA's *"Every Day Counts"*

- Accelerated contracting: Andy Cardinali
- Accelerated Bridge Construction: Mary Baker

Accelerated Bridge Construction in Connecticut

Connecticut Department of Transportation

What is Accelerated Bridge Construction?

ABC uses innovative planning, design, and construction methods, in a safe and cost-effective manner, to reduce project delivery time and onsite construction time

Why Consider Accelerated Bridge Construction?

- Improves Work zone safety - closures
- Reduces congestion – short duration
- Economic impact – business and families
- Reduces on site construction time with prefabrication off site.
- Durability

FHWA and ABC

- **FHWA Highways for LIFE Program**
  - **L = Long lasting**
  - **I = Innovative**
  - **F = Fast Construction**
  - **E = Efficient and Safe**
  - **Focus on innovations including ABC**
- **Every Day Counts Initiative (EDC)**
  - **Bringing new technologies and project delivery methods into the highway construction market**
  - **Goal: To reduce project delivery time by 50%**
  - http://www.fhwa.dot.gov/everydaycounts/

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FHWA and ABC

"We need to change the way we build highways. We need to build them faster, have them last longer, have them be safer and at a lesser cost."

"Get In, Get Out, and Stay Out"

What has CTDOT done?

Past projects

Prefabricated decks

- I-84 Waterbury/Route 8 interchange
- Route 8 Viaduct Seymour

Prefabricated substructure elements

- South Maple Street Bridge Enfield

Prefabricated Elements in Connecticut

I-84 EB to Route 8 NB Exit Ramp

Waterbury

Deck replacement project

- 6 Span Bridge (700 ft long)
- Constructed in 48 days
- 22 years old – Very Good condition

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Prefabricated Elements in Connecticut

Route 8 Viaduct - Seymour

- Over 50 spans
- Weekend closures only
  - Old deck removed on Friday night
  - New deck erected on Saturday morning
  - Open to traffic Sunday night
- In service for 20 years
- Very good condition

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Prefabricated Elements in Connecticut

South Maple Street, Enfield

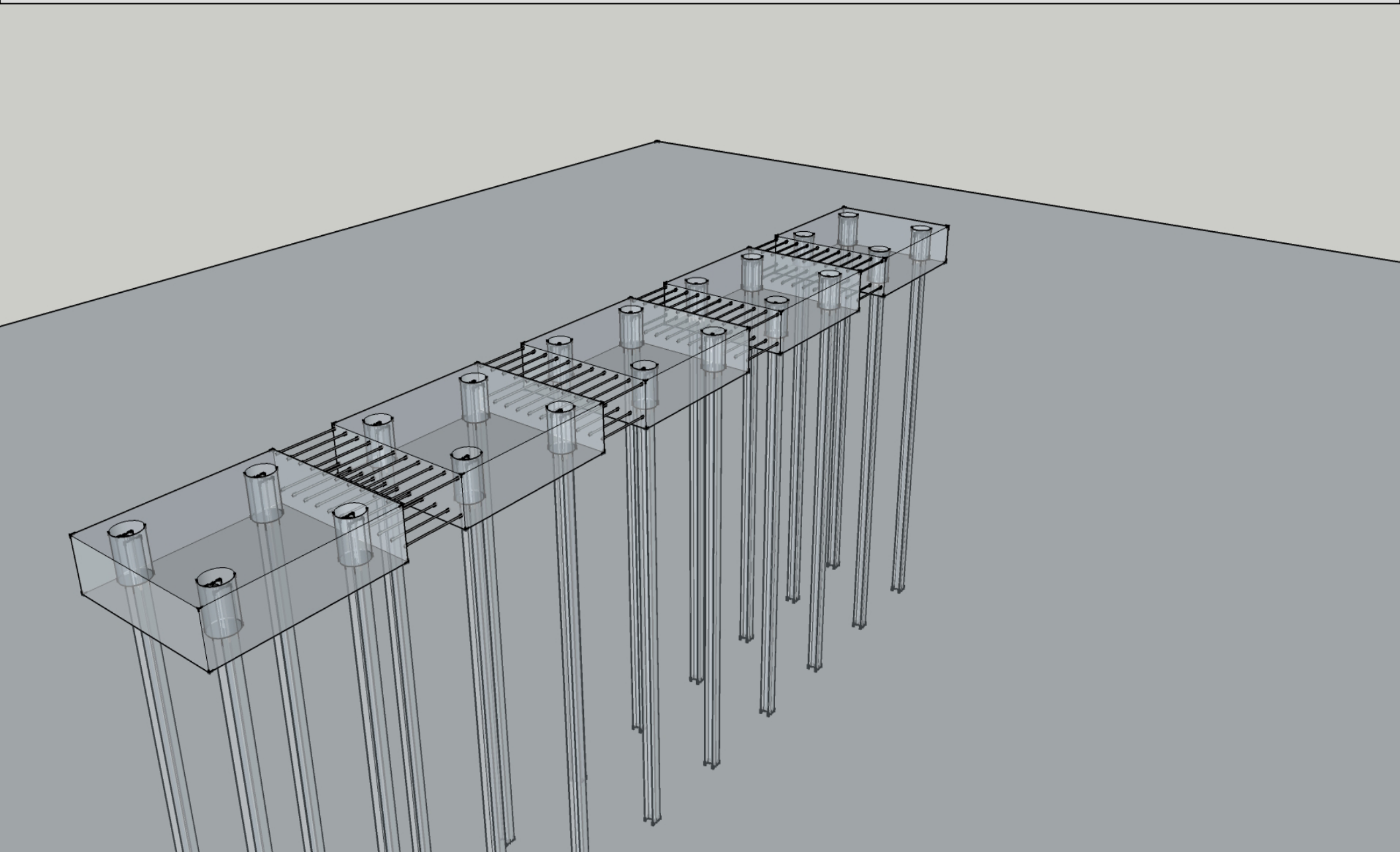
Bridge replacement project

- Federal Local Bridge Program
- Single Span Bridge
- Entire bridge is precast concrete

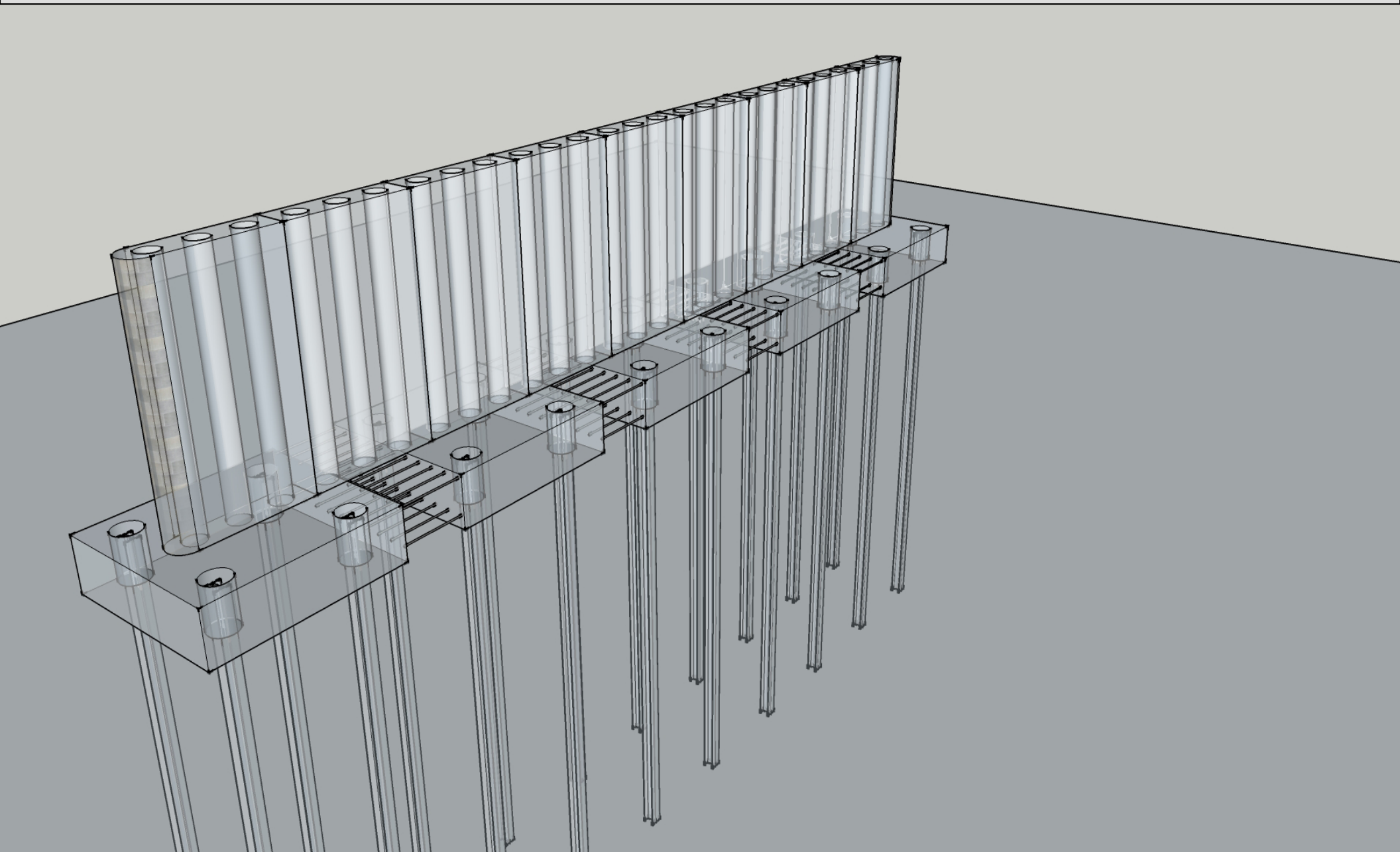
What is CTDOT doing?

Prefabricated Elements (Abutments & Piers)
Hartford-New Britain Busway –CT Fastrak
Flatbush Avenue Bridge

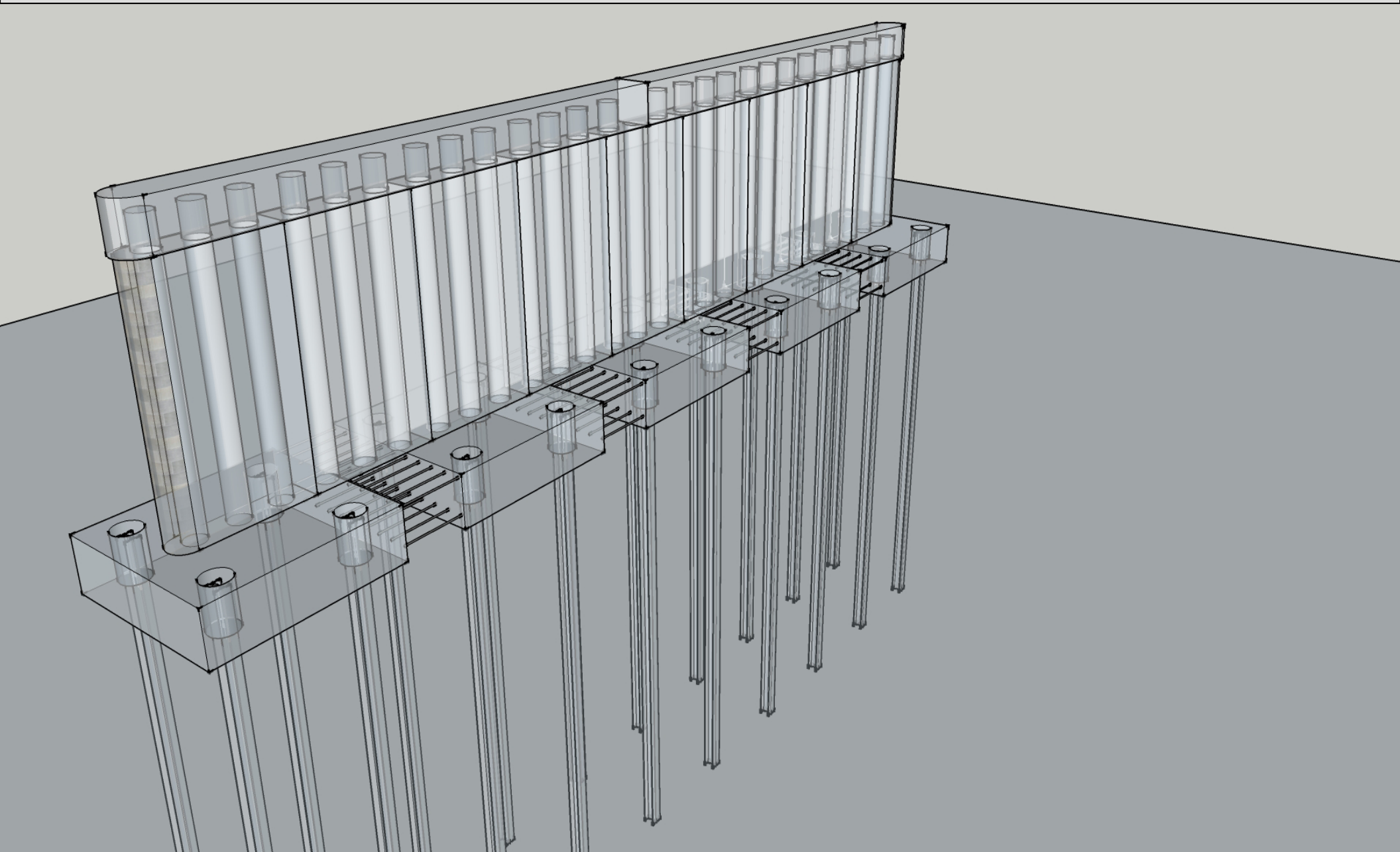
Flatbush Ave. Pier Construction: Stage 1



Flatbush Ave. Pier Construction: Stage 2



Flatbush Ave. Pier Construction: Stage 3



Flatbush Ave. Pier Construction: Completed Pier

What is CTDOT doing?

Streamlining project delivery

http://www.ct.gov/dot/cwp/view.asp?a=1399&q=260048

What will CTDOT be doing?

- **Project 131-194/195**
  - Rehabilitation of Bridges 01235 and 01236
  - I-84 EB and WB over Marion Avenue, Southington
  - Superstructure replacements ~ 102 ft.
  - AASHTO girders replaced by NEBT
  - Built in gore area, Exit 30
  - I-84 closed one weekend for demo and replacement using SPMTs
  - Advertising February 13, 2013

I-84 over Marion Ave, Southington

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Bridge 01236 (WB) Looking Toward Plantsville Center

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Large Scale Placement Methods

Build Superstructure Offsite Move using Self Propelled Modular Transporters

Connecticut Department of Transportation

What will CTDOT be doing?

Project 75-129

- SSR 450 (Hammonasset Connector), Madison
- Replacement of Bridge 05466 over Huzzle Guzzle Brook
  - Precast concrete arch frame
  - Precast substructure
  - Road closure: 2 weeks
  - Construction planned for 2014

Bridge 05466 Location

Connecticut Department of Transportation

Bridge 05466 Elevation

Connecticut Department of Transportation

What will CTDOT be doing?

Project 82-298

- Replacement of Bridge 02190
- Route 17 over Long Hill Brook, Middletown
  - Precast concrete arch frame
  - Road closure: 1 weekend
  - Construction planned for 2014

Bridge No. 02190
Location: South of Rt. 155

Connecticut Department of Transportation

Bridge No. 02190
East Elevation

Connecticut Department of Transportation

What will CTDOT be doing?

Project 157-083

- Route 57, Weston
  - "Bridge in a backpack"
  - Replacement of Bridge 01023 over West Branch Saugatuck River
  - 28 ft span arch increased 44 ft
  - Developed in Maine
  - Concrete filled carbon fiber arch tube
  - Several have been built in New England
  - Construction planned for 2015

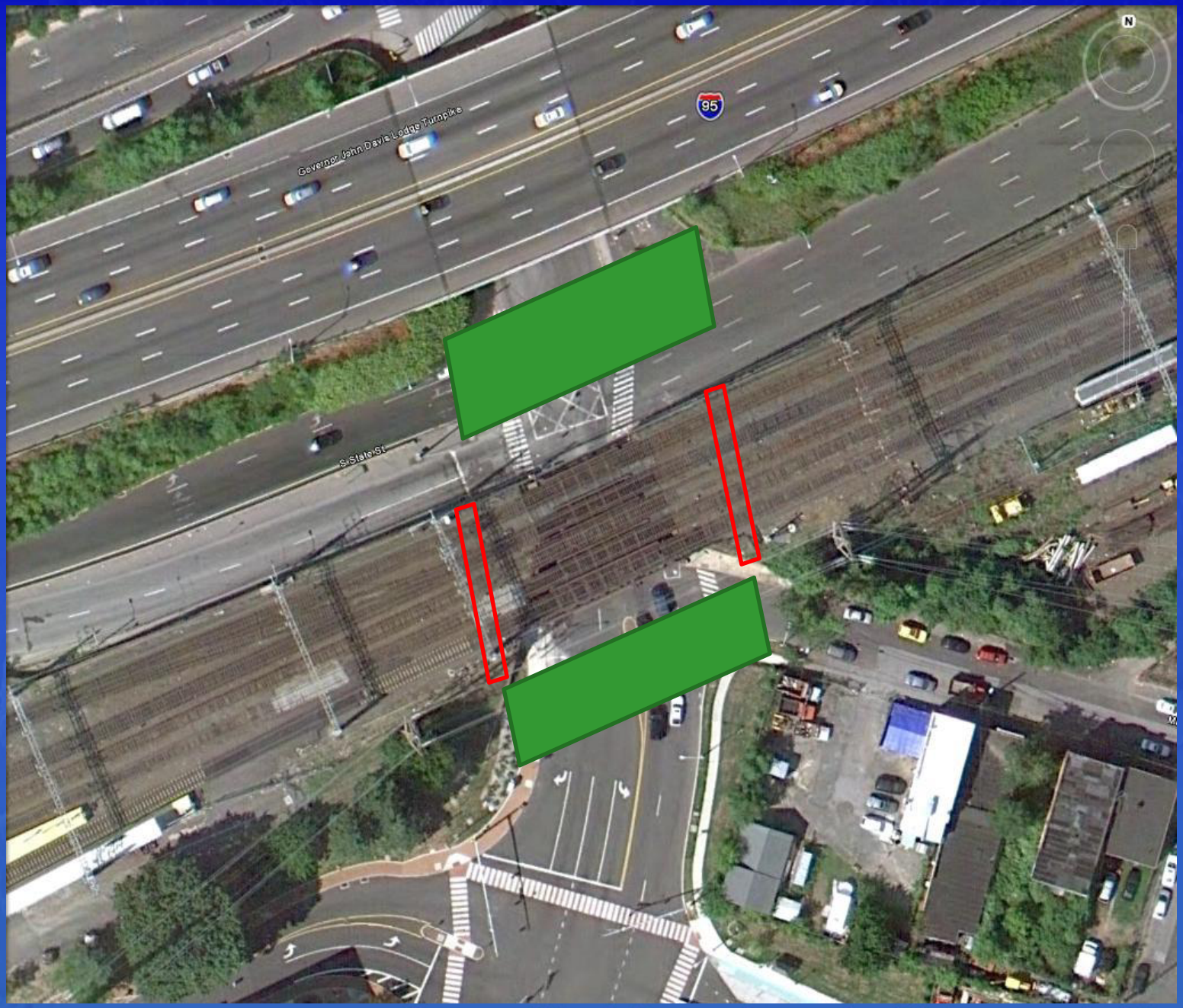
What will CTDOT be doing?

Atlantic Street Bridge - Stamford

MNRR Bridge over Atlantic Street, Project 135-301

- Build Superstructure Offsite
- Move using Self Propelled Modular Transporters
- Reduces Construction from 5 years to 18 months
- 2016 Construction

Proposed Atlantic Street Construction



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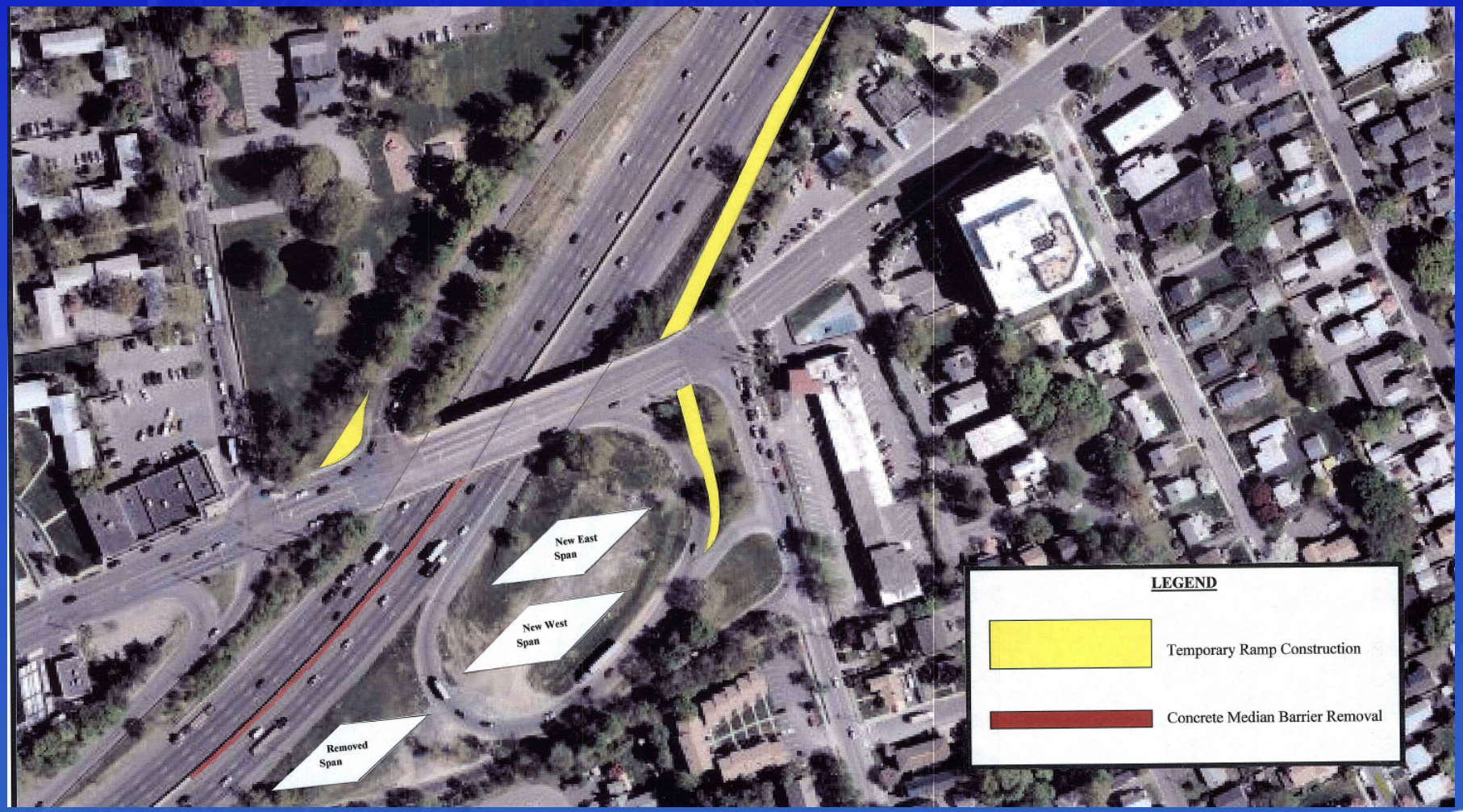
What will CTDOT be doing?

Accelerated Bridge Construction,
Bridge No. 00037, U.S. Route 1 over I-95, Stamford



Conclusions

- **CTDOT is committed to using ABC**
  - Several successful projects have been built in the past
  - Several are in the pipeline
  - We are establishing an ABC program
  - We have experts on board to assist and train Department staff
  - Improved Safety and Reduced Mobility Impacts are the key driving factors

Contact

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ALTERNATIVE CONTRACTING IN CONNECTICUT

Connecticut Department of Transportation

PUBLIC ACT NO. 12-70

"AN ACT CONCERNING DEPARTMENT OF TRANSPORTATION PROJECT DELIVERY AND PROJECT LABOR AGREEMENTS FOR CERTAIN PUBLIC WORKS PROJECTS"

PASSED MAY 2012

WHY USE ALTERNATIVE CONTRACTING METHODS IN CT?

- Get projects on the street faster
- Promote ingenuity from the industry
- Help control cost overruns
- Small percentage of projects will be advertised using alternative contracting methods

WHAT WILL THE DEPARTMENTS PROCESS LOOK LIKE?

- Modeled after other states
- Transparent process
- "Best Value" selection process

Proposed Design Build Approach

- Phase 1: Preliminary Project Development
  - Work done by CTDOT with assistance from CLE
  - Survey
  - Preliminary Design – Identify viable concepts
  - Preliminary geotechnical
  - Preliminary Maintenance & Protection of Traffic
  - Hydraulics
  - Preliminary Drainage
  - Right of Way Acquisition
  - Environmental Permitting
  - Begin public involvement process

Proposed Design Build Approach

- Phase 2: Team Qualifications Solicitation
  - Initial Advertisement for Team Qualifications
    - Contractors
    - Design Consultants
  - Submission of Qualifications Packages
  - Selection committee established
  - Submissions reviewed and scored
  - Possible interview of teams
  - Development of Short list
  - Notification to selected teams

Proposed Design Build Approach

- Phase 3: Technical Proposals
  - CTDOT established technical proposal format
    - Requirements, Scoring criteria, etc.
  - Teams allowed to submit alternative technical concepts
    - Confidential meetings with CTDOT
    - Review and approval of concepts by CTDOT
  - Teams develop technical proposals
    - Details
    - Construction methods
    - Schedule
    - Other information requested in RFP
  - Teams develop bid proposals
  - Teams submit technical proposals and bid proposals
    - Separate sealed envelope for bid proposal

Proposed Design Build Approach

- Phase 4: Technical Proposal Evaluation
  - CTDOT established a selection panel
  - Panel reviews technical proposals (not cost proposals)
  - Proposals are scored based on pre-established scoring criteria

- Phase 5: Team Selection
  - Public Bid opening
  - Scores are announced
  - Bids are opened
  - CTDOT reviews bids and makes final selection
  - Contract awarded
  - Stipends may be awarded to losing short listed teams

Proposed Design Build Approach

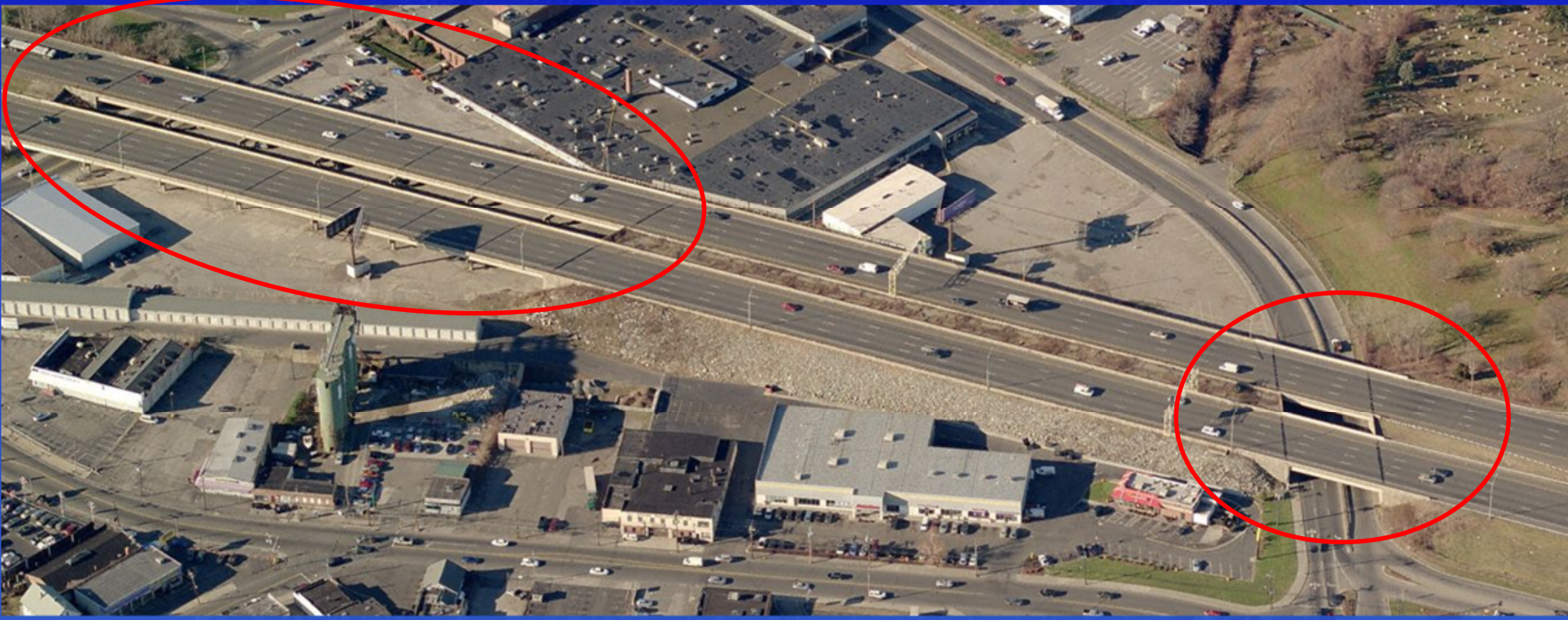
- Phase 6: Construction
  - DB Team Creates QA/QC Plan
    - Submit to CTDOT for review and approval
  - DB Team completes the final design
    - Submit for review and approval
  - Contractor prepares project schedule with milestones
  - Construction starts upon approval of final design

WHAT IS THE DEPARTMENT DOING NOW?

- Developing the procurement process
  - Help from other states
  - Help from "YOU"
- Establish an "Alternative Contracting" web page
  - Visit frequently for updates
- Developing plans and specifications for pilot project

Fast Track Contracting – Design Build

Route 8 - Bridgeport



Superstructure replacements – ABC with Design Build

- 4 bridges – Modular Construction (similar to Fast 14)
- Impact to travelers reduced from 2+ years to just days
- Project Delivery Time reduced by 1 year
  using Design Build contracting

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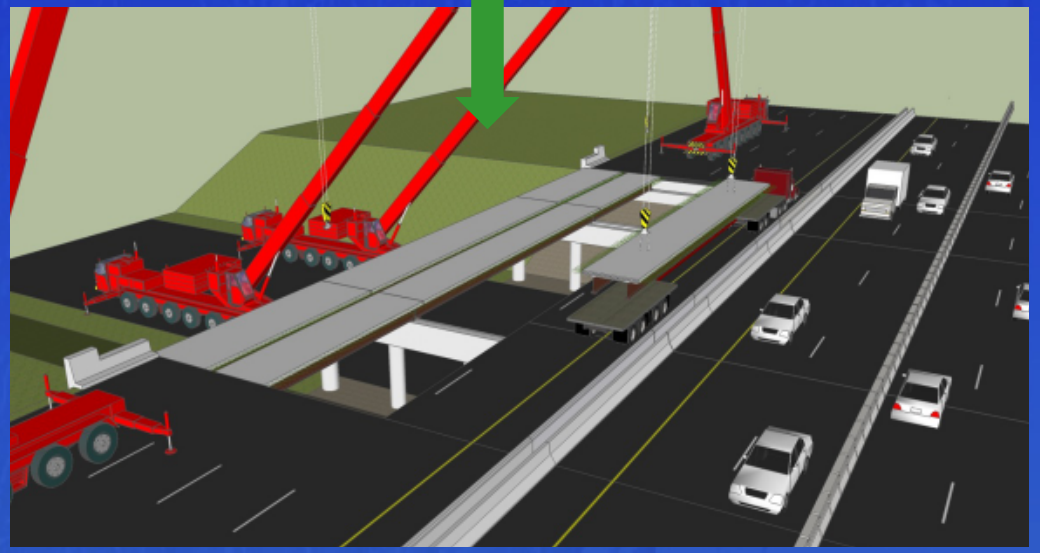
Fast Track Contracting – Design Build

Route 8 - Bridgeport

Proposed Construction Approach



Superstructure replacements

- 4 bridges – Modular Construction
- Shift traffic to opposite side of highway
- Investigating filling of some spans
- Scheduled for bidding in 2013

Conclusions

- **CTDOT is moving forward with Design-Build**
  - **Keep your eyes on the "Alternative Contracting" website**
  - **Send in your questions and concerns**
  - **We will keep you informed as we update our process**

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THE DEPARTMENT'S PATH MOVING FORWARD

Obtaining Stakeholder Buy-In

- Who are they?
  - The traveling public
  - Industry:
    - Consultants
    - Contractors
    - Fabricators

- Establish a consultant group and a contractor group
  - Meet regularly to discuss the program and details
  - Facilitate training opportunities

Keys to Success

- Establish a Program of Projects for DB and ABC
- Design Build <5% of program
- Establish an ABC Decision Making Process
  - Assess each bridge project for ABC potential
- Demonstration Projects
- Develop Standard Details
- Establish a Communications Program
  - Stakeholders
  - Public
- Measure Success
  - Lesson Learned
  - Goal: Continuous Improvement
- Expect Problems and Learn from them
  - Don't let issues be stumbling blocks

Conclusions

- **CTDOT is committed to using ABC**
- **Improved Safety and Reduced Mobility Impacts are the key driving factors**

  - **Several successful projects have been built in the past**
  - **Several are in the pipeline**
  - **We have engaged experts to assist and train Department staff**

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Conclusions

- **Accelerated Project Delivery**
  - **Design Build: First project is underway**
  - **CM at Risk: Process is under development**

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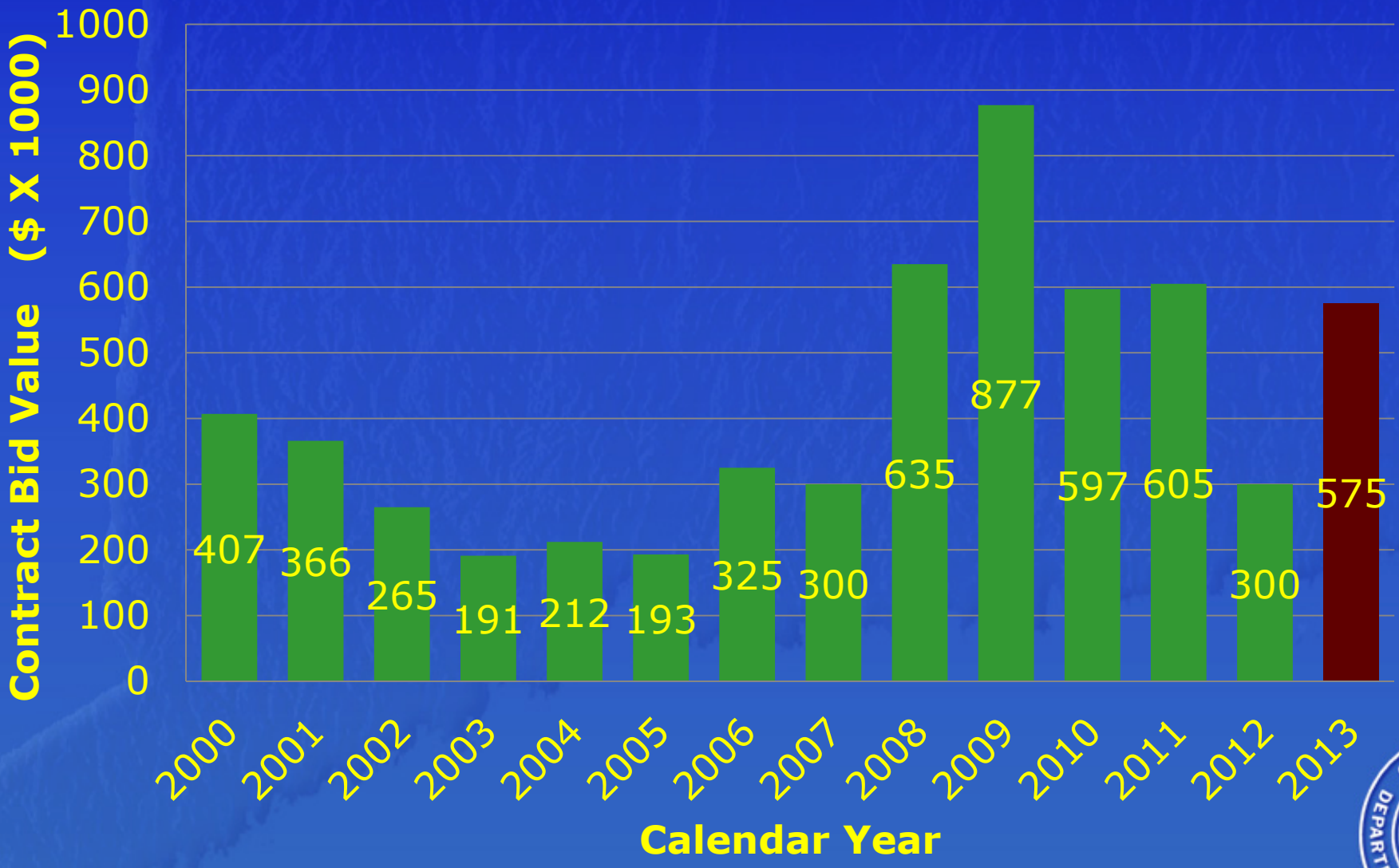
Questions

Contract Production Levels

# of Projects	78	76	64	39	49	38	68	46	67	62	73	82	60	80 +/-



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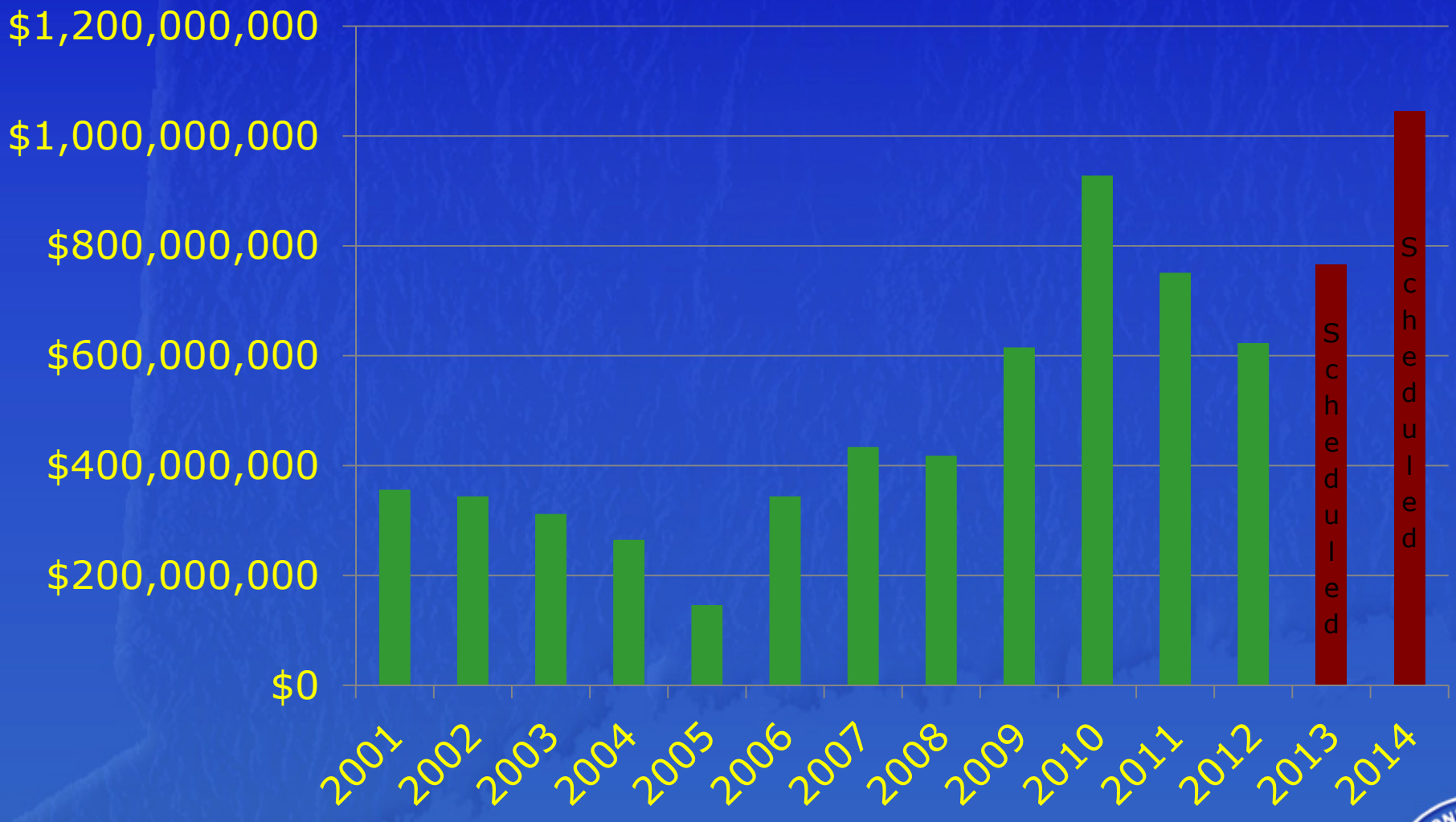
Advance Construction

Authorization Levels @ end FFY



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LARGEST TO SMALLEST BASED ON ADVANCED CONSTRUCTION AMOUNT

	STATE	AC Amount
1	VIRGINIA	$4,861,366,566.13
2	TEXAS	$4,231,414,105.19
3	FLORIDA	$3,238,884,922.00
4	CALIFORNIA	$2,713,964,417.96
5	WASHINGTON	$2,703,486,543.00
6	NORTH CAROLINA	$2,624,761,370.00
7	NEW YORK	$1,980,762,246.06
8	OHIO	$1,803,762,545.95
9	MASSACHUSETTS	$1,546,829,471.51
10	INDIANA	$1,518,780,614.29
11	ILLINOIS	$1,452,958,169.31
12	GEORGIA	$1,411,732,716.13
13	SOUTH CAROLINA	$1,347,785,438.67
14	NEW MEXICO	$1,297,059,826.05
15	COLORADO	$1,219,936,392.67
16	MISSISSIPPI	$1,148,345,953.26
17	MARYLAND	$1,138,240,019.67
18	KENTUCKY	$973,089,429.06
19	MISSOURI	$946,148,094.00
20	IDAHO	$928,627,048.59
21	ARIZONA	$852,191,147.32
22	RHODE ISLAND	$748,503,694.27
23	MICHIGAN	$726,383,711.39
24	PENNSYLVANIA	$657,582,866.90
25	CONNECTICUT	$642,719,057.73
26	NEVADA	$634,176,665.09

LARGEST TO SMALLEST BASED ON PERCENTAGE OF ADVANCED CONSTRUCTION VERSUS PROGRAM SIZE

	STATE	AC AMOUNT	PROGRAM SIZE	PERCENTAGE
1	VIRGINIA	$4,861,366,566.13	$983,295,735	494.40%
2	WASHINGTON	$2,703,486,543.00	$655,048,211	412.72%
3	NEW MEXICO	$1,297,059,826.05	$354,842,211	365.53%
4	RHODE ISLAND	$748,503,694.27	$211,321,702	354.20%
5	IDAHO	$928,627,048.59	$276,374,882	336.00%
6	MASSACHUSETTS	$1,546,829,471.51	$586,857,641	263.58%
7	NORTH CAROLINA	$2,624,761,370.00	$1,005,905,582	260.94%
8	MISSISSIPPI	$1,148,345,953.26	$467,334,071	245.72%
9	COLORADO	$1,219,936,392.67	$516,699,260	236.10%
10	SOUTH CAROLINA	$1,347,785,438.67	$606,647,974	222.17%
11	MARYLAND	$1,138,240,019.67	$579,048,922	196.57%
12	NEVADA	$634,176,665.09	$350,870,661	180.74%
13	FLORIDA	$3,238,884,922.00	$1,830,766,277	176.91%
14	INDIANA	$1,518,780,614.29	$920,713,612	164.96%
15	NEW HAMPSHIRE	$249,953,563.67	$159,650,990	156.56%
16	KENTUCKY	$973,089,429.06	$642,020,926	151.57%
17	OHIO	$1,803,762,545.95	$1,295,208,613	139.26%
18	TEXAS	$4,231,414,105.19	$3,049,292,304	138.77%
19	CONNECTICUT	$642,719,057.73	$485,321,374	132.43%
20	NEW YORK	$1,980,762,246.06	$1,621,928,778	122.12%
21	ARIZONA	$852,191,147.32	$706,984,241	120.54%
22	GEORGIA	$1,411,732,716.13	$1,247,654,420	113.15%
23	KANSAS	$406,044,032.56	$365,151,808	111.20%
24	DELAWARE	$179,971,312.39	$163,453,423	110.11%
25	ILLINOIS	$1,452,958,169.31	$1,373,790,152	105.76%
26	DC	$160,977,255.16	$154,177,646	104.41%

September 2012